

[ These changes reflect changes made to the same proposal during the 2024 IECC code collaboration process where it received considerable scrutiny. This language has not been through the IECC public review but it is a general improvement in the language and is likely to be very nearly the same as the 2024 IECC. The changes include:

- Clear separation between process and non-process boilers
- Language clean-up with better incorporation with the existing Boiler System definition
- One substantive new exception from oxygen controls for multifamily buildings.

The new exception was a concern raised by the IECC subcommittee that because these controls were found to be not cost-effective in apartments according to the Title 24 case study, they should be exempt from IECC. The proposed language covers the majority of potentially non cost-effective building types in the committees opinion. ]

COMMERCIAL BOILER. A type of boiler with a capacity (rated maximum input) of 300,000 Btu/h or more and serving a space heating or water heating load in a commercial building.

PROCESS BOILER. A type of boiler with a capacity (rated maximum input) of 300,000 Btu/h or more that serves a process.

PROCESS APPLICATION. A manufacturing, industrial, or commercial procedure or activity where the primary purpose is other than conditioning spaces and maintaining comfort and amenities for the occupants of a building.

C403.3.4 Boiler requirements. Boiler equipment and systems shall comply with the following is section.:

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C403.3.4.1 Combustion air positive shut-off. Combustion air positive shut-off shall be provided on all newly installed boiler systems as follows:

1. All boiler systems with an input capacity of 2,500,000 Btu/h and above, in which the boiler is designed to operate with a nonpositive vent static pressure.

2. All boiler systems where one stack serves two or more boilers with a total combined input capacity per stack of 2,500,000 Btu/h.

**C403.3.4.2 Boiler system oxygen concentration controls.** Boiler system combustion air fans with motors 10 horsepower or larger shall meet one of the following for newly installed boilers:

1. The fan motor shall be driven by a variable speed drive; or
2. The fan motor shall include controls that limit the fan motor demand to no more than 30 percent of the total design wattage at 50 percent of design air volume.

**C403.3.4.3 Boiler systems oxygen concentration controls.** Newly installed boilers systems with a steady state full-load combustion efficiency less than 90 percent and an input capacity of 5,000,000 Btu/h and greater and a steady state full-load combustion efficiency less than 90 percent shall maintain stack-gas oxygen concentrations at less than or equal to not greater than the values specified in Table C403.3.4.31. Combustion air volume shall be controlled with respect to firing rate or measured flue gas oxygen concentration. The use of a common gas and combustion air control linkage or jack shaft is prohibited.

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**Table C403.3.4.31**  
**Boiler Stack-Gas Oxygen**  
**Concentrations**

Boiler System Type	<del>Minimum-Maximum</del>
	Stack-Gas Oxygen Concentration <sup>a</sup>
<del>Commercial Boilers</del> Less than 10% of the boiler system capacity is used for process applications at	5%

~~Minimum-Maximum~~

Stack-Gas Oxygen

Boiler System Type

Concentration<sup>a</sup>

design conditions.

All OthersProcess Boilers

3%

<sup>a</sup> Concentration levels measured by volume on a dry basis over firing rates of 20 to 100 percent.

Exception: These concentration limits do not apply where 50% or more of the boiler system capacity serves Group R-2 occupancies.